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Thank you, Venkat. And now we'll take questions from the audience, and I'll remind the audience that you can submit questions at the top of your screen, there should be a question and answer or Q&A button. The first question we have, Walt, I think is for you and it ties all of the issues together, and that is if a proponent of a transmission line comes to the BLM with a right-of-way application specifying that they would like their transmission line to be a specific distance away from another high voltage existing transmission line, can BLM through the NEPA process analyze an alternative with a lesser minimum distance between the proposed and the existing transmission line?

The answer to that is yes, Robert. The guiding principle is the NEPA regulations that require federal agencies to analyze and consider reasonable alternatives. again, what BLM would look at is a closer location reasonable and we would take into account environmental considerations, land use considerations both public and private, and also the operational needs, which includes reliability of the utility. Because the WECC standards and criteria are not prescriptive, they don't prescribe a certain distance as we just learned, the distances as to how close a utility is comfortable with has some variability and is subject to some interpretation. So again, that would be something that BLM would try to consider and look at in determining whether closer alignment would be reasonable and should be fully analyzed in the environmental impact statement.

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Okay, thank you, Walt. We have another question and Venkat, I think this might be most appropriate for you. The question is, why is the separation distance additive? Wouldn't the regional minimum distance in your Wyoming case also meet the absolute minimum requirement?

Yes, this is a very good question and more detail on how it was derived exactly is given in the report for which we would show the link later, but here is a short answer to that. The REG MIN actually is 1500 feet, out of which 260 feet is being unaccounted for by the AD MIN component, and so exclusively for the regimen it would be 1240 feet, which is 1500 minus 260, and that is how it was derived. And so the sum of the three components, the 260 plus 0 plus 1240 is 1500. I hope that answers the question. It's a short answer. If not, I can go into detail.

Okay, thank you, Venkat. Another question, Brian, this might be best suited to you. The question is, who is responsible for enforcement of NERC standards?

Who is responsible for the enforcement of NERC standards? WECC comes to the utilities or the transmission owners and does the audit, and then NERC, there may NERC as well as FERC people, but really WECC is the entity that does the auditing, and then NERC has the ability to fine the individual owners, and we've seen examples of that recently where I think it was a Florida utility was fined 25 million dollars for violations, I think it was a year and a half to two years ago.

Okay, thank you, Brian. I am seeing a couple of questions where it's just the author's name, but the question is not coming through, so I would encourage the audience to make sure that their question is coming through. I do have another one and this might be for a couple of people, but I think Venkat, we'll start with you. Does the ICF study consider possible buried transmission lines and the associated line reliability and separation distance associated with those? For example, should the BLM, I think if this question is coming from the BLM, it says should we be considering and analyzing a buried transmission line option in our NEPA documents? So Venkat, if you could address the first part of that question. In other words, does the ICF study consider buried transmission lines and the associated line reliability and separation distance, and then we'll leave the NEPA part of the question to Walt.

Sure. The answer is no, we do not consider buried, and in buried I take it to mean underground transmission lines, and the reason for that is, the factors that affect the outage of the transmission line, such as weather factors and things like that, are not the causes for the outage for the buried transmission lines. So we do not consider that.

Okay, thank you and before we go to the NEPA part, maybe just to elaborate on that and Brian may want to comment on this. Is it true that buried lines just like

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the last several span lengths of above ground lines, the criteria that we've been discussing do not apply? Brian?

That's correct. If you look in the language, I think it says the last five spans do not count for that criteria.

Okay, thank you. And Walt, the second half of that question, and again just to read it here. It says should we be considering and analyzing a buried transmission line option in our NEPA documents? And I would assume that would be where a proponent would come to BLM with a right-of-way application proposing an above ground transmission line.

Again, the NEPA criteria would be the reasonableness of the proposal. I know that burying high voltage transmission lines is an emerging technology. There are many companies that are promoting their product and claiming that it can solve a lot of environmental problems. Obviously if we can bury transmission lines, they're out of sight, a lot of the environmental concerns would be resolved. However, there aren't very many buried high voltage electric transmission lines. Of course, service lines to houses and communities are buried as a routine measure, but 345, 500 kV and greater voltage transmission lines, I believe the longest stretch of those types of lines that are buried in this country doesn't exceed 50 miles. So the technology is emerging and then so the question is, is it reasonable, would BLM need to consider that as a reasonable alternative in

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environmental impact statement? My personal opinion, and I think you'll see this also expressed in some of the draft environmental impact statements that are coming out for some of these proposed high voltage lines, is that considering burying the entire length of the project hundreds of miles is really not practical at this time both because of technology and cost. Another thing to consider, if a buried line goes out, you've got to dig it up to repair it, which could take days, weeks, perhaps even months, whereas outages of above ground transmission lines are usually repaired in a matter of hours, days at the very, very most if you have a severe storm event that might take out a whole section of line, for example. So I think it's reasonable to look at burying transmission lines for very, very short distances if it would resolve in a cost-effective manner a site-specific environmental situation. At the moment I don't really have any examples of that, but I think as the technology continues to develop and environmental conflicts are identified at certain alignments, if there is no other place to reasonably go with the transmission line because of a pinch point or congested area, that might be something that BLM would want to consider in an environmental impact statement.

Okay, thank you, Walt. Now here's a question, I'm not sure who to direct this one to initially, but it's, if the separation distance exceeds the height of the towers, what would be the vegetation clearing needs for the area between lines? For example, for forested areas, would forest conversion to brush or young stands be necessary between lines? So if I understand that question correctly, they're

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making the assumption that if the separation distance between the lines exceeds the height of the towers, in other words, if one tower fell over, it would not hit the other line or the other tower, would there be vegetation clearing needs or requirements? And I'm assuming this relates to NERC and WECC standards and criteria. And for forested areas would in some cases forest conversion to brush or young stands be a requirement? Brian, do you have any input on that relative to the NERC and WECC standards? Is that something you could address?

Sorry, I do not. I don't really know about the field or the vegetation management and such.

I can make a comment on that. I know from the reliability standards that again came out of the 2005 Energy Policy Act and these NERC standards and that there are specific requirements relative to distances vegetation has to be away from lines, and it certainly has to do with reliability, but another concern in the west is obviously related to fire, and I know Western Area Power Administration, for example, is addressing that need on their transmission line, which I think approximately 300 miles of their lines in the Rocky Mountain region go through national forest lands. So it is something that's being addressed and I'm not sure about the actual requirement, but I know that they try to in some cases change or affect the habitat types so that they don't have to go back into the right-of-way frequently and can go back in less frequently, thereby having less disturbance.

So that may be something we had to look back into, the actual standards to see what the actual distances requirements might be.

Robert, this is Walt. I think I might be able to add a little insight into that also.

Great.

I think really while we're dealing in this, both of these situations deal with the subject of reliability, it's really maybe two different criteria or standards. The vegetation issue, the required clearance underneath and immediately adjacent to the transmission line, those standards have to do with one, worker safety, when people are working around the lines, but also with that vegetation either growing up into the lines or if, say, a tall tree were to fall over onto the lines. So those clearance standards for vegetation are designed to prevent physically encountering vegetation with the conductor lines, and of course also people need to remember that as these lines heat up either during the day because of ambient temperature or because of the amount of electricity they're carrying, they sag. Because of the heat, they expand and then they sag. So those vegetation clearances requirements are really directed at that type of situation, whereas the reliability that we're talking about have to do with the interaction between two adjacent or nearby transmission lines or circuits.

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Okay, great. Thanks for that clarification, Walt. Well, another question related to the separation distance, it says in the ICF example the calculated 1500 feet separation distance is all well and good, but if the maximum span length is longer than this, what recourse does the utility have with adhering to the WECC standard? That is, does the utility need to provide a study that verifies that the mean time between failure would be greater than 30 years using the 1500 foot distance? Venkat, do you understand that question or do I need to repeat it?

No, I understand that and I can take a shot at answering that. First, the 1500 feet value was derived based on a set of assumptions and the key assumption is that it is for a typical 500 kV line, and the 1500 feet represents the span length between two towers. Now if the lines characteristics were different and therefore the span length was different, then based on the derivation of the distance, which is again in more detail in the report, the separation distance will also change based on the span length. So that's one of the factors that come into determining the separation distance. So there is that, and also regarding the study for the MTBF, that also is based on certain assumptions regarding the construction of transmission lines such as fire breaks and lightning and so on. So those also need to be taken into account.

Okay.

Robert, can I add to that please?

Yes, absolutely, Brian.

Okay, my understanding of the question is, if the separation is less than the span length, then you're in the Category C in the WECC Common Corridor Criteria and you have different performance requirements added to that. And the consent of the mean time between failure of 30 years, really the assumption is that you with that design or that placement, that it is a Category C and there is a process which the owners can go through which is called a Performance Category Upgrade Request and that's where the once in 30 years comes into effect where it goes through a WECC subcommittee, the Reliability Subcommittee actually is called the RPEWG or Reliability Performance Evaluation Work Group, which would evaluate this upgrade request and look at the history or projected performance of those lines in a corridor and the robustness of the construction and design to determine whether that could be exempted from that common corridor criteria. Over the past 10 years there have been four lines that have gone through that process, and all four have been exempted from the Category C.

Great. Well, thank you, Brian and Venkat, that was very helpful. We have another question and this one actually is directed to Walt and Brian. In the Gateway West Project, which is one of the transmission projects in that first slide we showed, Segment 6 has WECC analyzed the separation at pinch point?

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Does Idaho Power proposed location meet that criteria? Now Walt and Brian, if you're familiar with this project as well, I know Walt is. Maybe for the greater audience if you could respond to that question in a general sense just because a lot of people might not be familiar with that particular project.

Sure. This is Walt. I think I can explain what Segment 6 and people may be able to understand it, and then I'll give a more generalized answer. Segment 6 is one portion of the Gateway West Project. It's an existing 345 kV line that the utilities propose to upgrade to a 500 kV capacity. The line was constructed with that capability, so the action for the project merely means changing some circuitry components to then allow the 500 kV voltage to flow through the line as opposed to the existing 345 voltage. There is no construction proposed with that segment. It does go through an area between the Craters of the Moon National Monument and Minidoka Reservoir National Wildlife Refuge. There's about a 2 mile-wide corridor or gap in there where there are a number of existing electric transmission lines, and there's also some proposed in another segment of Gateway West, which is supposed to go south of the Snake River at some distance from Segment 6, was initially considered as a potential alignment through there, but because of the close proximity to Segment 6 and other lines, was not deemed reasonable for reliability reasons to be fully analyzed or considered in the draft environmental impact statement. The questioner asked has WECC analyzed that pinch point? Gateway West is going through the WECC criteria process. As you recall from Brian's presentation, it's a three-step

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process and I think the utility is in step two of the process. And this points out one of the I guess dilemmas that we have and that is that BLM needs to have the capability, I would say I guess, or it would be nice to have in the environmental impact statement a draft EIS, a comparison of alternatives. For example, how much reliability would a utility give up if a line were placed in a closer alignment than, say, one that was further away. That response or that information doesn't really come until the end of the WECC process, which under the current processes between BLM and WECC doesn't occur until the BLM NEPA document is typically somewhere around either right before or after the final environmental impact statement is released. So we don't have that information, that comparative information between gain in environmental benefits by putting lines closer together, but being able to compare that to loss and reliability. That information will be available when the WECC process is completed and I know that, for example, Idaho Power per Segment 6 or Rocky Mountain Power, whichever one is operating that segment, would be required to meet reliability criteria, WECC's reliability criteria in order to be given the capacity rating that their project seeks or needs in order to operate.

Okay, I think that's pretty thorough. But Brian, did you have anything to add to that answer?

No, I really don't. The only other thing I guess I could add is I've not heard, because of the pinch point that they're talking about that they have addressed or

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have talked with the other group, the RPEWG about trying to get the exemption from that. I have not heard that, so my assumption is they are not.

Okay. Let's go on to another question. To what extent does ICF study consider other authorized land uses either within or adjacent to the proposed transmission line? For example, buried pipelines, nearby farming, nearby wind turbines, etc.

Venkat, can you address that question?

Yes. No, it did not consider other authorized land uses at this point. We looked at transmission lines only.

Okay.

Robert, this is Walt.

Yes.

But that's exactly what BLM would be doing in environmental impact statement. In other words, all of the land uses, the constraints and opportunities for siting, farming, irrigated farmlands, public land resources such as cultural resources and wildlife habitat, and reliability, all are blended into the analysis and the pros and cons, advantages and disadvantages of all the alternative routes, would be presented in a draft environmental impact statement, and that's really the

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dilemma that we're at. Utilities need reliability, the public and public land managing agencies seek to minimize environmental impacts, sometimes these two are not mutually consistent or compatible with one another, and therefore we're faced with some rather difficult choices in trying to determine where the best place to site some of these high voltage transmission lines should be.

That's good information. Thank you Walt and Venkat. Let's go on to another question. Why does WECC consider a more stringent factor by considering two towers within a corridor where NERC considers only double circuit on a single tower? Seems as though the agencies wouldn't be facing such conflict between land management goals versus the separation distances for reliability. Well Brian, that sounds exactly what your subcommittee is addressing. Would you care to respond to that question?

Yeah, that's exactly right. That's really what the group is looking at, why is that, why does this common corridor criteria exist? I mean, it doesn't make sense today. It obviously made sense 30-plus, 40 years ago that that criteria was adopted and enacted within WECC. And I think the main reason for that is the distances that transmission lines are exposed to here, the different environment as opposed, the environment for transmission lines in Wyoming and Arizona are much different than they are in Illinois or Ohio, and that's why I think that corridor criteria was really originated. And major paths like the COI, which is called the California-Oregon Interface, which is I think is a 4800 megawatt interface

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between the two states. I mean, that was, when they put the third line, that was a major factor in locating the third line away from the other two is to make sure that exposure to fire, forest fires or fires does not have the ability to take out multiple circuits in that path.

Okay, thank you. Another question. What, if any siting considerations are there for lines having a significant mix of renewable sources, such as wind and solar, other than geographic needs for connections? Does this make siting requirements much more complex? I think that might be a question for any of our speakers, but let me just repeat that first part. What, if any siting considerations are there for lines having a significant mix of renewable sources? Walt, would you like to start on that one?

Sure, and I'm going to put my own interpretation, I guess on that question. I get the sense that the questioner might be saying, is there any special siting considerations or special siting factors given for new high voltage transmission lines that would carry renewable energy resources? And if that is the intent of the question, my answer to that question is that I'm not aware of any specific siting benefits or consideration given just because a transmission line happens to carry a predominance of renewable energy. Once electricity is generated, all electrons are equal and the need is that regardless of where the electricity comes from, it needs to be delivered uninterrupted and so whether that electricity came from a coal-fired power plant or from a solar energy facility, it would need to be

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made reliable so that when the electricity is being generated and needed, it can be delivered.

Okay, thank you. Brian or Venkat, do you have anything to add to that response?

No.

No, this is Brian. There is no difference in the, just like what Walt said, when we do study work or WECC evaluate projects and path ratings the megawatts evaluated are irregardless of its generation origin.

Okay. Well, those are all the questions we have.